Donald G. Hillebrand

Educational Background

Ph.D. 1995	Systems Engineering, Mechanical Systems, Dissertation: "Determination of the Tribological Effects of Plateauing Machined Surfaces", Oakland University.
M.S. 1987	Chrysler Institute of Engineering, Automotive Technology and Engineering (non-accredited).
M.S. 1986	Mechanical Engineering, Fluid and Thermal - Computational Fluid Dynamics, Oakland University
B.S. 1984	Mechanical Engineering, Oakland University

Professional Experience

2004 – Present Section Manager
Argonne National Laboratory
Dr. Hillebrand leads the Vehicle Systems Section of Argonne National Lab's Center for Transportation Research. He leads the three groups that are responsible for advanced vehicle testing and evaluation, modeling and systems analysis, and hardware in the loop development of hydrogen technologies.

2003 – 2004 Manager
DaimlerChrysler Advanced Technology Portfolio Management
Dr. Hillebrand leads the government contracts office and was responsible for DaimlerChrysler's government-funded research contracts. The office comprises of a legal team, a financial team, and program managers, and is responsible for negotiating research contracts with suppliers, inventors, universities, and government entities, and administering the resulting contracts and programs. The office prepares quarterly reports and meets the needs of program project management, including financial oversight, time keeping, and program tracking. Dr. Hillebrand is the business leader of the Fuel Cell Demonstration and Validation proposal to DOE. The proposal was selected and is currently an $88M dollar research program. He managed the implementation of the supplier technology-tracking program known as TRRS. He was also responsible for relations with the DaimlerChrysler European-based research labs. Dr. Hillebrand in his position with ATPM is responsible for technology selection, funding, and research direction at DaimlerChrysler. He also serves as the business representative to USCAR and acted as the Daimler representative to the FreedomCAR technical teams.

2000 – 2003 Manager of Research Policy
DaimlerChrysler Forschung und Technologie – Stuttgart Germany
Dr. Hillebrand was responsible for DaimlerChrysler's research and technology liaison with the European Commission in Brussels, and interacting with European research organizations and business groups including EIRMA (European Industrial Research Management Association), EURAB (European Research Advisory Board), UNICE (The Union of Industrial and Employers' Confederations of Europe), and BDI (Bundesverband der Deutschen Industrie). Dr. Hillebrand influenced the political and technical debate in Brussels, especially handling the new European research program, in the preparation of upcoming regulations in areas such as auto safety, the environment and energy efficiency. Dr. Hillebrand was instrumental in linking together the diverse groups involved in the research process, including the European research

organizations, the auto companies, and the Washington establishment. Dr. Hillebrand was selected as a member of the "High Level Working Group" created by the European commission to evaluate the future of innovation. He also was a member of the DaimlerChrysler Fuels strategy group, and a representative to the advanced technology propulsion labs.

1998 – 2000 Manager of Technical and Regulatory Affairs
DaimlerChrysler Washington Affairs

Dr. Hillebrand was DaimlerChrysler's expert for advanced vehicle technology in the Washington Office. He was responsible for interfacing with various research and regulatory groups, setting research strategy in critical areas, and coordinating research efforts with Federal Agencies, automotive companies and related industry groups. He served on the board of directors of the Fuel Cell Alliance, and the Electric Vehicle Association. He was the representative to the Council on Competitiveness, the Natural Gas Vehicle Coalition, and the Industrial Research Institute. He was the main contact to the Department of Energy, especially for the PNGV, but also for related energy and research programs. Dr. Hillebrand was the lead technical person for work with EPA on fuels, emissions and fuel economy. Dr. Hillebrand also worked as a liaison with the EPA lab in Ann Arbor. Dr. Hillebrand was well known on Capitol Hill, and he worked with industry groups, environmentalists, and government agencies to lower the sulfur level in fuels. Dr. Hillebrand was the General Chair of the SAE Government-Industry Meeting, was elected to leadership in the Washington Section of the SAE, and was later elected to the SAE Board of Directors. Dr. Hillebrand was named the SAE's Outstanding Young Engineer of 1999, and that same year he was selected to be a Fellow in the Engineering Society of Detroit.

1996 – 1998 Senior Policy Advisor
White House Office of Science and Technology Policy
Technology Division - Transportation

Dr. Hillebrand represented the White House in various PNGV and transportation activities. He was a member of the PNGV Operational Steering Group, and he acted as a primary contact and liaison to the DOE. Dr. Hillebrand worked to bring various government participants in PNGV closer together. He was responsible for directing the OMB funding decisions with respect to transportation research funding for the 1998 and 1999 fiscal year. Dr. Hillebrand was instrumental in reorganizing Federal ITS and AHS funding and was the chief White House technical advisor in the negotiations between agencies, the Economic Council and OMB with respect to transport research funding. He was the secretary of the White House Automotive Strategy and Policy Committee, and chaired several supervisory boards that oversaw the research spending of agencies including the Department of Transportation, NASA, Environmental Protection Agency, Department of Energy and the Department of Commerce. He was also responsible for planning and publishing the White House Critical Technologies report.

1995 – 1996 Technology Fellow
U.S. Department of Commerce

Dr. Hillebrand was selected to for a one-year period as an SAE Fellow through the AAAS Washington Fellow Program. He was responsible for various duties pertaining to the direction and coordination of the PNGV program. Dr. Hillebrand oversaw the publication and dissemination of several PNGV reports, assisted the TA in the publishing of assessments of the auto industry and the steel industry, planned and executed the Vice Presidential symposiums and the Vice President's PNGV medal. He organized industry visits to National Labs, took part in the PNGV peer reviews and the NRC assessment of the program, and worked to bring together industry and government for technology selection and funding consensus. At the Department of Commerce, Dr. Hillebrand was involved in the planning and execution of the Vice President Symposiums on advanced vehicle technology. He was a liaison to the Clean Car Coordinating Committee, and he was responsible for overseeing the effort to strengthen the

PNGV vehicle systems analysis. When assigned to the DOE, Dr. Hillebrand worked to answer Congressional inquiries and to help formulate the DOE transportation strategic plan. Dr. Hillebrand was instrumental in attaining consensus from the auto companies to keep PNGV focused on its mission, and he worked to enhance communication and cooperation during the later years of the PNGV program. He was temporarily assigned to NASA, DARPA and the DOE during his year with Commerce.

1991 – 1995 Senior Engineer
Minivan Platform Vehicle Development

Dr. Hillebrand was responsible for developing the ride and handling characteristics of the 1996 Minivan. This included planning, designing and testing the NVH package for the vehicle systems, and then working on the launch teams to take the concepts into production. Dr. Hillebrand developed the testing protocol for the analysis of wind noise that was eventually used by the other Chrysler Platform Teams to address NVH compliance testing. He was assigned to a team to make Diesel engines acceptable to the consumer from the NVH and BSR standpoint.

1990 – 1991 Product Engineer
Chrysler Scientific Labs – Aerodynamics and Fluid Dynamics

While attending graduate school, Dr. Hillebrand was assigned to investigate potential uses of new CFD software and to look for applications relevant to Chrysler Motors. Hillebrand succeeded in solving new complex flow geometry problems using computational fluid dynamics and applied those to exhaust flow problems. This resulted in a breakthrough in catalytic converter design that changed the design of Chrysler's exhaust plumbing. The resulting design was adopted by all Chrysler groups and applied throughout the company. This resulted in longer catalyst life and better catalyst utilization.

1989 – 1995 Teaching Assistant
Oakland University

Dr. Hillebrand worked as a lab instructor, class instructor and researcher. He created lab procedures and co-wrote the manual that is currently used in the Properties of Materials Lab. Dr. Hillebrand acted as a mentor to many of the graduate students in Oakland's program. He was the recipient of the DeVlieg Fellowship during his years at Oakland, a competitive fellowship recognizing excellence in research and teaching. Dr. Hillebrand wrote and presented numerous papers in the field of tribology at various STLE conferences during his years at Oakland. At Oakland University, Dr. Hillebrand collaborated in teaching a graduate class on applied mathematics and prepared a paper detailing a finite element problem solution.

1986 – 1989 Project Engineer
Chrysler Project Liberty

Dr. Hillebrand began his career working in the Chrysler Advanced Development group, or the Liberty Program and was responsible for developing unique or interesting innovations. During this time he experimented with photovoltaics, modular assembly, and energy saving technologies. Dr. Hillebrand led a team that focused on improving Chrysler's performance in low speed impact. Dr. Hillebrand invented and patented the Hytrel Energy absorber. This patent generated $45 Million in cost savings and was applied to most Chrysler Passenger cars in 1988 – 1992. The Hytrel unit was superior in performance and less costly than the existing technology. Hillebrand's invention was eventually applied to all Chrysler passenger cars and resulted in considerable part cost savings and a higher insurance safety rating for Chrysler vehicles.

1990 – 1991 Full-time graduate student in Ph.D. program at Oakland University, Rochester MI

1984 – 1986	Chrysler Institute of Engineering - Assignments in Cooling Systems, Assembly Plant, Proving Grounds, Energy Management, and Advanced Development, Highland Park MI.
1983	Summer Intern – Chrysler Motors
1980-1983	Park Officer – Michigan Department of Natural Resources

Professional Societies (chosen to be consistent with job responsibilities)

Society of Automotive Engineers (SAE)
Elected to SAE board of Directors
SAE Strategic Committee
SAE Membership Service Board
Leadership Board of SAE Washington DC section
Engineering Society of Detroit (ESD)
Named Fellow of ESD
ESD Publishing Committee
American Association for the Advancement of Science (AAAS)
AAAS Washington Fellow
Tau Beta Pi
Society of Tribologists and Lubrication Engineers (STLE)

Honors

SAE Distinguished Younger Member 2000
SAE Outstanding Young Engineer 1999
Elected Fellow of ESD - Engineering Society of Detroit
Department of Commerce Commendation 1996
Michigan Outstanding Young Engineer of the Year 1993
Who's Who in Engineering
ESD Accomplishment award 1997
DeVlieg Fellow 1993 - 95
Chrysler Chief Engineers Award 1989
Society of Plastics Engineering Design Award 1988
Oakland University Alumni Achievement Scholarship
Tau Beta Pi Engineering Honorary
Oakland University Honors College

Patents

US Patent No. 4624493 *Self-restoring energy absorber bumper mount*.
This patent generated $45 Million in cost savings and was applied to most Chrysler Passenger cars in 1988 – 1992.

Organizational Activities

Organizing Committee of ENV 1996, 1998, 1999
General Committee of the 1996, 1997, 1998 SAE Government Industry Meeting
General Chairman of the 1999 SAE Government Industry Meeting
Technical Chair ENV 2001
SAE Washington Section Meeting Spring 2000 "The PT Cruiser"

Community Service

Volunteer Mentor for SAE WISE program (Washington Interns in Science and Engineering)

Volunteer Mentor and Fundraiser for Washington DC MIST (Minorities in Science and Technology)
Elected Addison Township Delegate 1990 - 1994
Named Delegate to the State Convention – Michigan 1992 and 1994
Volunteer – Detroit Area Habitat for Humanity

Publications: Journal Articles and Book Contributions

Amable B., Berkhout A.J., Kneucker R., Barber J., Hillebrand D.G., Enqvist R., and Mulett J., *Innovation Tomorrow, Innovation policy and the regulatory framework: Making innovation an integral part of the broader structural agenda,* European Commission Study of Research and Innovation 2003

Hillebrand, D.G., Barber, G.C., Hovanesian, J.D., and Witte, M.W., *Development of the Lateral Effect Photo Diode Technique to Measure Oil Film Thickness*, Tribology Transactions, 41, 1998, 3, 382-386.

Fine, C.H., St. Clair R., Lafrance J.C., and Hillebrand D.G., *Meeting the Challenge: The U.S. Auto industry in the 21st Century: The U.S. Automobile Manufacturing Industry*, Washington D.C.: U.S. Department of Commerce Office of Science and Technology Policy, December 1996

Hillebrand, D. G., *Government-Participant Interactions*, Washington D.C.: U.S. Department of Commerce PNGV Secretariat, October 1996

Cyert R.M. and Fruehan R.J., *Meeting the Challenge: U.S. Industry Faces the 21st Century-The Basic Steel Industry*, U.S. Department of Commerce Assistant Secretary for Technology Policy 1996 (Reviewed and Edited)

Hillebrand, D.G., *Tribological Effects of Plateauing Machined Surfaces,* Doctoral Dissertation Oakland University, Rochester MI 1995

Spagnuolo A., Hillebrand D.G., Witte M.W., and Cooprider A., *Solution to Linear 2-Dimensional Elliptic Equations by the Finite Element Method*, Duke University Melosh Medal Competition, November 1992

Lowell J. (via interviews of D. Hillebrand)., *Tough Climb to the Top, Engineering on the Inside*, WARDS Auto World, March 1990 66-67

Selected Presentations/ Speeches

Hillebrand D.G., “Measuring Oil Film Thickness Using the Lateral Effect Photo Diode,” STLE Annual Meeting, Cincinnati, Ohio May, 1996,

Hillebrand D.G., “The Tribological Effects of Plateauing Machined Surfaces,” STLE Annual Meeting, Chicago, IL May 1995.

Hillebrand D.G. and Barber G.C., “Solid Lubricants and their High Temperature Application to Adiabatic Engines” STLE Annual Meeting Pittsburgh, PA May 1994.

Soboll, H.S. and Hillebrand D.G., *Innovation of European Industry,* Vienna Industrial Forum, Vienna, Austria 04. March 2002

Vöhringer, K.D. and Hillebrand D.G, *The Impact of Globalization*, Magdeburg Environmental Forum, Magdeburg, Germany Wednesday, 21 November 2001

Soboll, H.S. and Hillebrand D.G, *Prospects for the 21st* Century - *The Industry View,* Conference on Science and Technology in Europe , Technical University of Gdansk 9 – 11 October 2000

Vöhringer, K.D. *The Challenge of the Car of Tomorrow,* BASF Exploratory Research Forum 2002 Ludwigshafen, 15. November 2002

Soboll, H.S. and Hillebrand D.G *The Impact of Public Opinion on Innovation,* Le Mas d'Artigny, Saint-Paul Vence, 11/12 January 2001

"Accomplishments of UltraLight Steel Auto Body (ULSAB)", Ron Schuster, Don Hillebrand, John McElroy, AISI's Automotive Applications Committee (AAC), Manhattan, New York Stock Exchange (NYSE) June 1998

"Lessons learned in the PNGV", Materials Research Society Symposium, Washington DC, May 1997